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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,456	11/19/2003	Takashi Okuda	009683-486	3920
21839	7590	06/28/2005	EXAMINER	
BURNS DOANE SWECKER & MATHIS L L P POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404				NGUYEN, KHAI M
ART UNIT		PAPER NUMBER		
				2819

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/715,456	OKUDA ET AL.	
	Examiner	Art Unit	
	Khai M. Nguyen	2819	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 16 June 2005.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1,2,4-6 and 8-12 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) 6 and 8-12 is/are allowed.
 6) Claim(s) 1-2, and 4 is/are rejected.
 7) Claim(s) 5 is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-2 & 4 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaneaki et al. (US 5,068,661) (hereinafter referred to as "Kaneaki").

Regarding claim 1, Kaneaki discloses (Fig. 3) a modulator using a delta-sigma conversion method, and comprising: component separating unit (80) for producing, generating or separating a signal component (Q1) and an error signal or component (the quantization error – see column 5, lines 60-65) of a digital input (digital input) signal from each other; a single-stage delta-sigma modulator (90) modulating the error signal; and an output operating unit (including: 11-12, 30) operating the signal component (Q1) and the error signal (Q2) modulated by said delta-sigma modulator (90), wherein the modulator (90) comprises: integrators (including 6-9), quantizer (10) coupled to the last/final integrator (9); and a delay element (5b) coupled to the output of the quantizer (Q2) for providing negative feedback to the integrators.

Regarding claim 2, Kaneaki discloses the component separating unit (80) including a first quantizer (3) for quantizing at least in part of the digital input signal; and an adder (4) adding at least in part of the digital signal to the signal component (Q1 or B1) provided from the first quantizer (3).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneaki (US 5,068,661) in view of Ribner (US 5,103,229). Kaneaki discloses the apparatus of the above claims except for showing the second block/modulator 90 including modulators that are cascaded. Ribner discloses a sigma-delta type modulator circuit that includes cascaded modulators in a second modulator block (this second block includes modulators 20/30, for example, see Fig. 1) for receiving an error from a first/preceding stage/modulator and outputting modulated signal to an output block (the elements that outside the dash boxes). Therefore, the inclusion of cascaded modulators (in the second block 90 as taught by Kaneaki) after the first stage or the component separating unit would have been obvious to one person having ordinary skills in the art at the time of the invention was made because including these cascaded modulators (the third stage) will improved the resolution of the converter/modulator overall (abstract).

4. Claims 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 6, and 8-12 are allowed.

Contact Information

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khai M. Nguyen whose telephone number is 571-272-1809. The examiner can normally be reached on 9:00 - 5:30 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert (Bob) J. Pascal can be reached on 571-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KN
June 22, 2005

Peguy Jean-Pierre
PEGUY JEAN-PIERRE
PRIMARY EXAMINER